

## How do marital adjustment and quality of life affect infertile couples? A hospital-based study

Marital adjustment in infertile couples

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### Abstract

**Aim:** In this study, it was aimed to evaluate marital adjustment and quality of life in infertile couples and to determine on which issues they need support.

**Material and Methods:** This cross-sectional analytical study was conducted on 222 individuals receiving or planning to receive infertility treatment. Quality of life (QoL) was evaluated with the "Fertility Quality of Life questionnaire (FertiQol)" and marital adjustment was evaluated with the "Marital Adjustment Scale".

**Results:** It was determined that 21.6% (n=48) of the participants were incompatible in marriage, and 78.4% (n=174) were compatible in marriage. Marital adjustment was statistically better in those who were younger ( $p=0.017$ ), those with a short time of marriage ( $p=0.004$ ), and those with a short treatment period ( $p=0.003$ ). A moderately positive and statistically significant correlation was found between the marital adjustment score and the total FertiQol score ( $r=0.456$ ) ( $p<0.001$ ).

**Discussion:** It was observed that marital adjustment and quality of life decreased as the years of marriage increased and the duration of treatment extended. QoL was found to be significantly higher in couples with good marital adjustment. Psychological counseling and support should be given to infertile couples receiving treatment, especially women, and the importance of couples' support to each other should be emphasized.

### Keywords

Marital Adjustment, Infertility, Infertile Couples, Quality of Life

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## Introduction

Infertility is a male or female reproductive system disease characterized by the absence of clinical pregnancy for 12 months without the use of any family planning method and regular sexual intercourse. It is estimated that 8% to 12% of couples worldwide suffer from it [1-3]. Common factors that cause infertility in both genders are environmental and lifestyle factors such as smoking, excessive alcohol intake and obesity. At the same time, exposure to environmental pollutants and toxins can be directly toxic for oosit and sperm, and this may result in infertility since it reduces the numbers and causes poor quality [4,5].

In a study conducted by Gulec et al. (2011) in our country, it was reported that infertile couples have problems in marital adjustment, and that no significant relationship was found between marital adjustment and sociodemographic characteristics in women and men [6]. In some studies, it was reported that couples receiving treatment perceive the diagnosis and treatment of infertility as a threat, and this perception brings the couples closer to each other, and their marital adjustment increases [7,8]. The ways of coping with infertility of men and women have different results on marital adjustment. Improvement in communication and marriage of the spouses increases as the interest and participation of men in infertility treatment increases [9]. When evaluating the quality of life in infertile couples, studies generally show results that support each other. Infertility is not a life-threatening health problem, but it has negative effects on the quality of life and mental health of individuals. Infertility affects both genders emotionally, but it is reported that the incidence of anxiety and depression is higher in females than males [10].

If the stress levels and psycho-social problems of the couples are addressed and appropriate treatments are developed, the quality of life of the couples and the success of the treatment can be increased. It was observed that the treatment is more successful in couples with high marital adjustment and quality of life. For this reason, in this study, it was aimed to evaluate marital adjustment and quality of life in infertile individuals and to determine on which issues they need support.

## Material and Methods

### Type of study, place and population

This study was planned as a descriptive and cross-sectional analytical study. The population of the study consisted of patients who applied to Necmettin Erbakan University Meram Medical Faculty, Department of Obstetrics and Gynecology, In Vitro Fertilization (IVF) Center and Infertility Polyclinic for infertility treatment between 01.04.2021 and 15.06.2021. In previous studies, the incidence of infertility in our country was found to be 15%. Since the number of individuals in the population was not known in our study, the number of subjects to be included in the study was calculated as at least 196 infertile patients using the formula  $n=t^2.p.q/d^2$ . However, the study was completed with 222 participants by adding 10% share due to the possibility of incomplete filling in the survey questions and refusal to participate in the study.

### Exclusion criteria

1) Secondary infertile couples

2) Presence of severe psychiatric disease

3) Those whose native language is not Turkish

### Ethics committee approval and consent

Necmettin Erbakan University Meram Medical Faculty ethics committee approval was obtained before starting the study (2018/1623 Date: 21.12.2018). Verbal and written consents were obtained from the individuals in accordance with the principles of the Declaration of Helsinki.

### Collection of Data

Questionnaires were filled by the researcher using face-to-face interview technique. In the first part of the questionnaire, there were questions to determine the demographic characteristics of the participants. In the second part, quality of life was evaluated with the "The Fertility Quality of Life questionnaire (FertiQol)" and marital adjustment was evaluated with the "Marital Adjustment Scale".

### Marital Adjustment Scale

"Marriage Adjustment Scale", which was used to measure marital adjustment in the study, was developed by Locke et al. (1959) [10], and its validity and reliability study in our country was performed by Tutarel-Kislak (1999) [11]. There are a total of 15 items in the scale and the possible scores range from one to 60. High scores indicate marital adjustment, and low scores indicate marital maladjustment. In the present study, the Cronbach's alpha value of the Marital Adjustment Scale total score was found to be 0.832.

### Fertility Quality of Life Scale for people with fertility problems (FertiQol)

FertiQol is 'Fertility Quality of Life Scale for People with Fertility Problems' scale developed by Boivin et al. (2011) with 36 questions [12]. Turkish internal reliability study was developed by Cetinbas et al. (2014) [13], and this scale evaluates the quality of life with 36 questions, including core 24 items, 10 items related to treatment, 2 items related to whole life and physical health. There are four subscales in the core part of the FertiQol scale, which consists of 24 questions. These are emotional, mind-body, relational, and social subscales. Each subscale consists of six questions. There are two subscales in the treatment section, and these are treatment environment and treatment tolerance subscale. A higher score means a higher quality of life. To calculate scale scores for the subscale and total scales, the raw score is multiplied by 25/k; k is the number of items in the subscale here. The scale score ranges between 0 and 100 [12]. In the present study, Cronbach's alpha value of FertiQol total score was found to be 0.874.

### Statistical analysis of data

The data were evaluated with the Statistical Package for the Social Sciences (SPSS) 22.0 statistical package program. Frequency and percentage, mean value, standard deviation, highest and lowest values were used for descriptive statistics in statistical analysis. Chi-square test was used for statistical analysis of categorical data, independent t-test was used in paired groups for the data conforming to normal distribution for statistical analysis of quantitative data, One Way ANOVA test (post hoc Tukey test) was used in groups of three or more.

## Results

Of the 222 participants in the study, 78.4% (n=174) were

female and 21.6% (n=48) were male. The mean age of female participants was  $31.22 \pm 6.02$  (min: 20, max: 46) years, and the mean age of male participants was  $34.91 \pm 7.03$  (min:24, max:53) years. It was determined that 45.0% (n=100) of the participants covered the treatment costs themselves and 69.4% (n=154) received emotional support from their families. When the cause of infertility is examined, 25.7% (n=57) of males, 36.0% (n=80) of females, 22.5% (n=50) of both genders, 15.8% of unknown causes were due.

**Table 1.** Comparison of quality of life with demographic characteristics

Life quality Sub-dimension scores	Gender	Female Mean $\pm$ SD	Male Mean $\pm$ SD	t	p
Emotional sub-dimension		60.96 $\pm$ 22.07	68.83 $\pm$ 24.65	-2.198	0.029
Mind-body sub-dimension		65.03 $\pm$ 24.65	73.26 $\pm$ 21.99	-2.092	0.038
Relational sub-dimension		79.62 $\pm$ 21.56	81.07 $\pm$ 16.12	-0.435	0.664
Social sub-dimension		69.97 $\pm$ 22.59	69.87 $\pm$ 19.66	0.026	0.979
Treatment environment sub-dimension		64.40 $\pm$ 19.44	66.05 $\pm$ 17.65	-0.532	0.595
Treatment tolerance sub-dimension		62.71 $\pm$ 23.61	71.09 $\pm$ 24.41	-2.160	0.032
Total FertiQol		67.37 $\pm$ 15.70	71.73 $\pm$ 14.55	-1.731	0.085
Life quality Sub-dimension scores	Employment status	Employed Mean $\pm$ SD	Unemployed Mean $\pm$ SD	t	p
Emotional sub-dimension		66.23 $\pm$ 20.46	59.95 $\pm$ 23.06	2.109	0.036
Mind-body sub-dimension		68.31 $\pm$ 22.93	65.67 $\pm$ 25.31	0.802	0.423
Relational sub-dimension		79.77 $\pm$ 23.04	80.05 $\pm$ 18.39	-0.103	0.918
Social sub-dimension		68.22 $\pm$ 19.75	71.26 $\pm$ 23.48	-1.020	0.309
Treatment environment sub-dimension		63.71 $\pm$ 19.45	65.56 $\pm$ 18.75	-0.716	0.475
Treatment tolerance sub-dimension		64.12 $\pm$ 25.00	64.83 $\pm$ 23.27	-0.216	0.829
Total FertiQol		68.65 $\pm$ 15.47	68.06 $\pm$ 15.64	0.279	0.780
Life quality Sub-dimension scores	Location of residence	Village/town Mean $\pm$ SD	Province Mean $\pm$ SD	t	p
Emotional sub-dimension		64.37 $\pm$ 22.62	62.03 $\pm$ 22.00	0.698	0.486
Mind-body sub-dimension		67.50 $\pm$ 21.51	66.56 $\pm$ 25.30	0.254	0.799
Relational sub-dimension		80.69 $\pm$ 27.55	79.65 $\pm$ 17.24	0.335	0.738
Social sub-dimension		74.02 $\pm$ 25.80	68.44 $\pm$ 20.22	1.691	0.092
Treatment environment sub-dimension		65.13 $\pm$ 17.72	64.62 $\pm$ 19.56	0.179	0.858
Treatment tolerance sub-dimension		67.29 $\pm$ 21.90	63.50 $\pm$ 24.69	1.045	0.297
Total FertiQol		69.98 $\pm$ 15.48	67.69 $\pm$ 15.56	0.975	0.331

\* Independent sample t-test was used.

The mean marital adjustment score was found to be  $48.59 \pm 8.10$  (min:21 max:60). When those who scored below 43 in the marital adjustment questionnaire were considered incompatible in marriage, and those who scored 43 and above were considered as compatible, it was determined that 21.6% (n=48) were incompatible in marriage and 78.4% (n=174) were compatible. The marital adjustment of the participants was statistically better in those with younger age (p=0.017), in those with a short marriage year (p=0.004), and those with a short treatment period (p=0.003). There was no statistically

**Table 2.** Comparison of quality of life and some characteristics

Life quality Sub-dimension scores	Duration of marriage	Less than 5 years Mean $\pm$ SD	More than 5 years Mean $\pm$ SD	t	p
Emotional sub-dimension		64.42 $\pm$ 23.95	60.71 $\pm$ 19.88	1.260	0.209
Mind-body sub-dimension		68.37 $\pm$ 22.64	65.07 $\pm$ 26.01	1.009	0.314
Relational sub-dimension		84.57 $\pm$ 20.13	74.76 $\pm$ 19.70	3.669	0.000
Social sub-dimension		70.61 $\pm$ 20.88	69.20 $\pm$ 23.15	0.478	0.633
Treatment environment sub-dimension		66.12 $\pm$ 17.89	63.25 $\pm$ 20.21	1.121	0.263
Treatment tolerance sub-dimension		67.94 $\pm$ 23.13	60.71 $\pm$ 24.44	2.265	0.025
Total FertiQol		70.47 $\pm$ 15.54	65.91 $\pm$ 15.24	2.205	0.029
Life quality Sub-dimension scores	Treatment duration	Less than 3 years Mean $\pm$ SD	More than 3 years Mean $\pm$ SD	t	p
Emotional sub-dimension		64.93 $\pm$ 22.75	59.75 $\pm$ 21.09	1.737	0.084
Mind-body sub-dimension		68.50 $\pm$ 22.43	64.64 $\pm$ 26.46	1.173	0.242
Relational sub-dimension		83.03 $\pm$ 21.16	75.94 $\pm$ 18.94	2.590	0.010
Social sub-dimension		72.26 $\pm$ 19.77	66.96 $\pm$ 24.24	1.793	0.074
Treatment environment sub-dimension		65.75 $\pm$ 18.06	63.48 $\pm$ 20.24	0.880	0.380
Treatment tolerance sub-dimension		67.80 $\pm$ 23.62	60.30 $\pm$ 23.90	2.331	0.021
Total FertiQol		70.52 $\pm$ 15.27	65.47 $\pm$ 15.48	2.430	0.016
Life quality Sub-dimension scores	Marital Adjustment	Poorly marital adjustment Mean $\pm$ SD	Well marital adjustment Mean $\pm$ SD	t	p
Emotional sub-dimension		49.82 $\pm$ 20.26	66.44 $\pm$ 21.19	-4.852	<0.001
Mind-body sub-dimension		53.64 $\pm$ 23.31	70.64 $\pm$ 23.27	-4.474	<0.001
Relational sub-dimension		61.11 $\pm$ 19.18	85.09 $\pm$ 17.66	-8.165	<0.001
Social sub-dimension		61.37 $\pm$ 20.09	72.54 $\pm$ 21.76	-3.198	0.002
Treatment environment sub-dimension		56.07 $\pm$ 18.53	67.17 $\pm$ 18.52	-3.672	<0.001
Treatment tolerance sub-dimension		53.38 $\pm$ 25.45	67.52 $\pm$ 22.73	-3.712	<0.001
Total FertiQol		56.05 $\pm$ 15.31	71.80 $\pm$ 13.80	-6.830	<0.001

\* Independent sample t-test was used.

**Table 3.** Comparison of the relationship between the cause of infertility and quality of life

Cause of infertility Score	Male (a) Mean $\pm$ SD	Female (b) Mean $\pm$ SD	Both (c) Mean $\pm$ SD	Unexplained (d) Mean $\pm$ SD	F	p
Emotional sub-dimension	65.57 $\pm$ 23.04	58.48 $\pm$ 22.41	58.50 $\pm$ 21.7	73.45 $\pm$ 17.47	4.875	0.004 <sup>bd</sup> 0.010 <sup>cd</sup>
Mind-body sub-dimension	68.42 $\pm$ 21.11	62.70 $\pm$ 24.12	65.58 $\pm$ 30.77	75.35 $\pm$ 16.24	2.373	0.071
Relational sub-dimension	78.07 $\pm$ 16.69	81.30 $\pm$ 19.43	76.25 $\pm$ 17.31	85.11 $\pm$ 30.01	1.575	0.196
Social sub-dimension	70.02 $\pm$ 23.91	67.60 $\pm$ 23.16	66.66 $\pm$ 20.41	79.88 $\pm$ 14.55	3.156	0.028 <sup>bd</sup> 0.031 <sup>cd</sup>
Treatment environment sub-dimension	63.37 $\pm$ 18.82	65.13 $\pm$ 20.86	65.33 $\pm$ 18.18	65.35 $\pm$ 16.81	0.135	0.939
Treatment tolerance sub-dimension	63.4 $\pm$ 24.32	64.14 $\pm$ 24.69	61.00 $\pm$ 23.80	72.85 $\pm$ 20.89	1.869	0.136
Total FertiQol	68.38 $\pm$ 14.94	66.69 $\pm$ 17.17	65.82 $\pm$ 14.94	75.48 $\pm$ 11.22	3.303	0.026 <sup>bd</sup> 0.024 <sup>cd</sup>

\*Anova test was used.

significant relationship between cause of infertility and marital adjustment ( $p=0.459$ ). The mean total quality of life score of the participants in the study was found to be  $67.66 \pm 15.38$  (min:20.59 max:93.38). A statistically significant relationship was found between gender and quality of life emotional sub-dimension score ( $p=0.029$ ), mind-body sub-dimension score ( $p=0.038$ ), and treatment tolerance sub-dimension score ( $p=0.032$ ). Table 1 shows the comparison of quality of life sub-dimensions according to sociodemographic characteristics.

No statistically significant correlation was found between the total score of quality of life and sub-dimension scores and the location of residence, disease, and family type. There was a statistically significant relationship between economic status and mental sub-dimension score ( $p=0.018$  ab), social sub-dimension score ( $p=0.033$ ), treatment environment sub-dimension score ( $p=0.047$  ab), total FertiQol score ( $p=0.035$  ab). A statistically significant relationship was found between the duration of marriage and the relational sub-dimension score ( $p=0.000$ ), treatment tolerance sub-dimension score ( $p=0.025$ ), and total FertiQol score ( $p=0.029$ ). Relational sub-dimension score, treatment tolerance sub-dimension score, and total FertiQol score were found to be higher in couples with less than 5 years of marriage. A significant relationship was found between treatment duration and relational sub-dimension score ( $p=0.010$ ), treatment tolerance sub-dimension score ( $p=0.021$ ), and total FertiQol score ( $p=0.016$ ). Relational sub-dimension score, treatment tolerance sub-dimension score and total FertiQol score were found to be higher in patients whose treatment duration was less than 3 years. A significant relationship was found between previous treatment method use and treatment tolerance sub-dimension score ( $p=0.026$ ). The treatment tolerance sub-dimension score was found to be higher in patients who did not use any treatment method before. Table 2 shows the comparison of quality of life/marriage age, duration, adjustment, and treatment-related characteristics.

A significant relationship was found between the cause of infertility and emotional sub-dimension score ( $p=0.004$  bd  $p=0.010$  cd), social sub-dimension score ( $p=0.028$  bd,  $p=0.031$  cd), total FertiQol score ( $p=0.026$  bd,  $p=0.024$  cd). Emotional sub-dimension, social sub-dimension, and total FertiQol score were found to be significantly higher in unexplained infertility, especially compared to female-induced infertility and infertility of both genders (Table 3).

## Discussion

It was observed that marital adjustment and quality of life directly or indirectly affect the results of the treatment in couples undergoing infertility treatment. Infertility affects both couples and its impact on the marital relationship may vary depending on personal coping methods and communication between spouses participating in the treatment. The ways in which men and women cope with infertility affect marital adjustment and the consequences of infertility on marriage. When the literature was examined, it was seen that there were few studies, which examine "marriage adjustment and quality of life" together. In the present study, we think that this study will contribute to the literature because of the detailed examination of the subscores of quality of life and the marital adjustment scale.

When the literature was examined, it was seen that there were conflicting situations reporting positive or negative results of infertility on marital adjustment. It has been reported that infertility brings couples closer together and has positive effects on their marital relations. In these studies, it was stated that the stress and disappointment experienced by infertile couples increase the harmony between couples and contribute to the development of the marital relationship [4,7]. In some studies, infertility itself, and also assisted reproductive techniques can cause sexual dysfunction, depression, anxiety and deterioration in relationships by consuming their physical and emotional energies, and can challenge the coping skills and social support resources of the couple [3,4]. It has been observed that the more men can help their wives to communicate and cope with their stress, the higher their marital adjustment will be [9]. In the present study, it was determined that marital adjustment decreased as age, year of marriage and duration of treatment increased. There was no significant relationship between marital adjustment and gender, education level, occupation, employment status, location of residence, economic status, marriage type, spouse's education level, spouse's employment status. In the study conducted by Bodur et al., no relationship was found between the duration of marriage, the duration of infertility, the duration of treatment and anxiety and depression levels [14]. In the study by Halici and Saatci, it was determined there was no significant relationship between marital adjustment and age, marriage age, duration of marriage, education level, spouse's education, occupation, family structure; and a significant relationship was found between the participants' previous treatment for infertility, being in employment and being well adjusted in marriage [15]. The detection of significantly higher anxiety and depression in infertile women compared to fertile women may explain the deterioration in marital relations in infertile women. As the income level of both genders increases, marital adjustment increases as well [14,16].

There are also studies reporting that marital adjustment and marital satisfaction do not change depending on fertility [17]. It was reported in some studies that the increasing support of couples undergoing infertility treatment improves their marital adjustment [7]. It was observed that approximately half of the people in the present study have a postgraduate education level. While some of the results in the literature are similar to this study, some of them differ. In the study conducted by Aarts et al., it was stated that 42% had a higher education level [18]. It was observed that a quarter of the participants had male infertility, more than one third of them had female infertility, less than a quarter had infertility resulting from both genders, and approximately one fifth had infertility of unknown cause. In the study by Pedro and Çelik, consistent with this study, it was observed that infertility was mostly caused by women and it was the least unexplained infertility [19]. In the study conducted by Van Empel et al., it was stated that 37% had an unexplained cause of infertility [20]. This situation can be explained by the progress of the examinations and the increase in diagnoses. There are many studies examining the effect of infertility on the quality of life of couples, and these studies in the literature generally support each other [21]. It is thought that the diagnosis and treatment of infertility may lead to deterioration

in the quality of life among couples [17]. In this study, while there was no difference in general quality of life between the genders, it was shown that women had a lower quality of life in terms of emotional sub-dimension, mind-body sub-dimension, and treatment tolerance sub-dimensions. Likewise, in the study conducted by Bolsoy, it was stated that the quality of life of women was lower than that of men [21].

In the study by Karabulut et al., general quality of life, mind-body sub-dimension, social sub-dimension, and treatment tolerance sub-dimension were found to be high in infertile couples treated for less than 5 years [22]. In the study by Çetinbaş, it was found that quality of life scores decreased as the duration of infertility increased [13]. In the study by Çağlar, the quality of life was found to be low in couples with unexplained infertility [23]. In this study, it was observed that the total quality of life score, relational sub-dimension score, and treatment tolerance sub-dimension score decreased as the duration of marriage and treatment increased.

A limitation of the present study is that although the sampled hospital was one of the largest in Konya, the participants in this study were relatively limited to the small number of couples presenting to the clinic for treatment. The most important limitation was that it was performed in a single center and there was no control group consisting of fertile couples. Therefore, the participants of this study were not representative of all infertile couples.

#### Conclusion

The relational sub-dimension score, treatment tolerance sub-dimension score, and total FertiQol score were found to be higher in couples with a marriage duration of less than 5 years and a treatment period of less than 3 years. FertiQol quality of life score and sub-dimension scores were found to be significantly higher as marital adjustment increased. Psychological counseling and support should be given to people who receive infertility treatment, especially women, and the importance of couples' support to each other should be explained.

#### Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

#### Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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#### Conflict of interest

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